

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS

**PROPOSED  
HIGHWAY PLANS**

FAP ROUTE 315 (US 136)  
SECTION (30) BJR

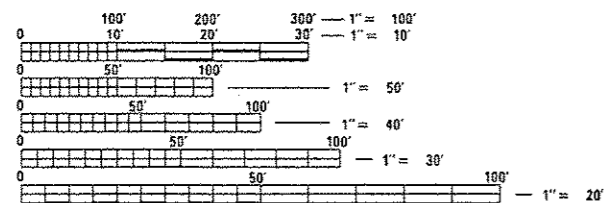
EXPANSION JOINT REPLACEMENT  
HANCOCK COUNTY

C-96-031-15

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
315	(30) BJR	HANCOCK	11	1
		ILLINOIS	CONTRACT NO. 72H56	

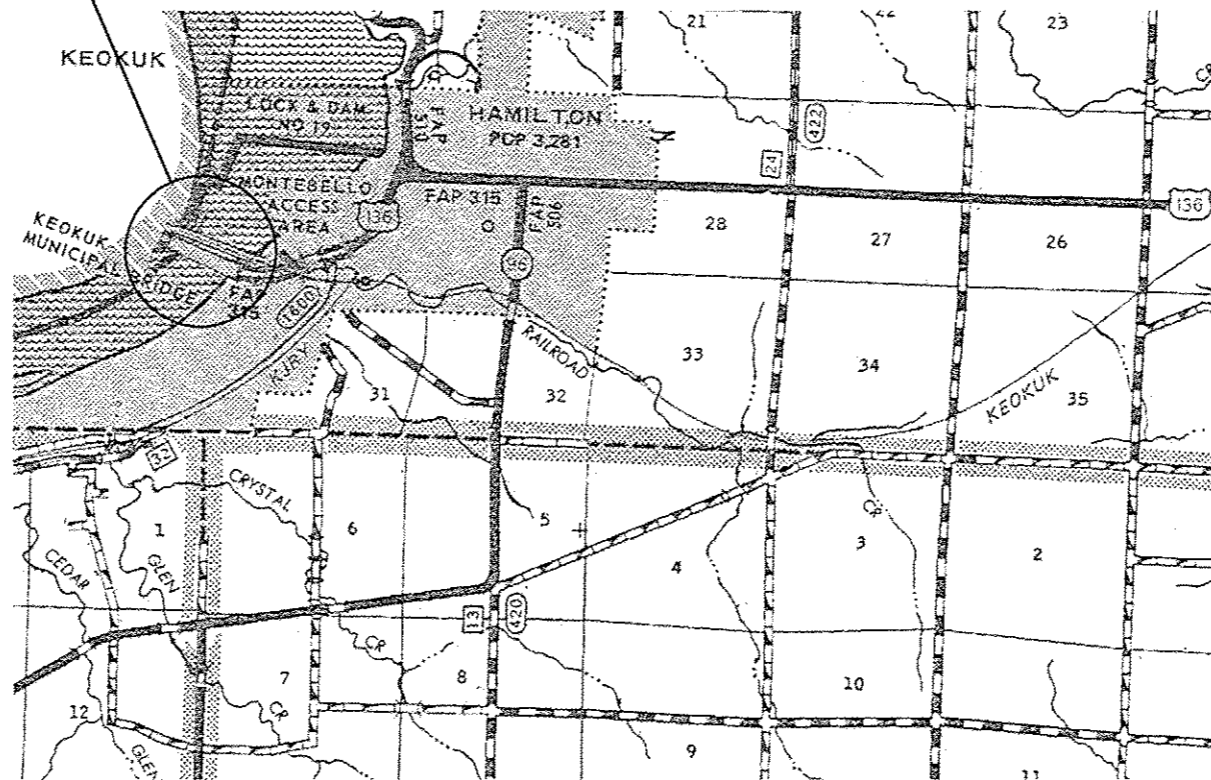
FOR INDEX OF SHEETS, SEE SHEET NO. 2

PROJECT LOCATION  
SN 034-0062  
US 136 OVER THE MISSISSIPPI  
RIVER AT KEOKUK, IOWA  
N40.3918° W91.3790°



FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD ENGINEERING SCALES. REDUCED SIZED PLANS WILL NOT CONFORM TO STANDARD SCALES. IN MAKING MEASUREMENTS ON REDUCED PLANS, THE ABOVE SCALES MAY BE USED.

J.U.L.I.E.  
JOINT UTILITY LOCATION INFORMATION FOR EXCAVATION  
1-800-892-0123  
OR 811



BRIDGE MAINTENANCE ENGINEER (ACTING): BRANDON DUDLEY - (217) 785-9290  
BRIDGE INSPECTION ENGINEER: DAVE COPENBARGER - (217) 785-5306

NET LENGTH = 3,340 FT. = 0.63 MILE

CONTRACT NO. 72H56

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS

SUBMITTED March 23 20 15  
Roger Z. Orndorff  
DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER

May 8 20 15  
John D. Baranzelli PE  
ACTING ENGINEER OF DESIGN AND ENVIRONMENT

May 8 20 15  
Omar Osman PE  
DIRECTOR OF HIGHWAYS, CHIEF ENGINEER

PRINTED BY THE AUTHORITY  
OF THE STATE OF ILLINOIS

INDEX OF SHEETS

- 1. COVER SHEET
- 2. INDEX, STANDARDS, SIGNATURES, & SUMMARY OF QUANTITIES
- 3-6 TRAFFIC CONTROL PLAN
- 7-11 BRIDGE PLANS

STANDARDS

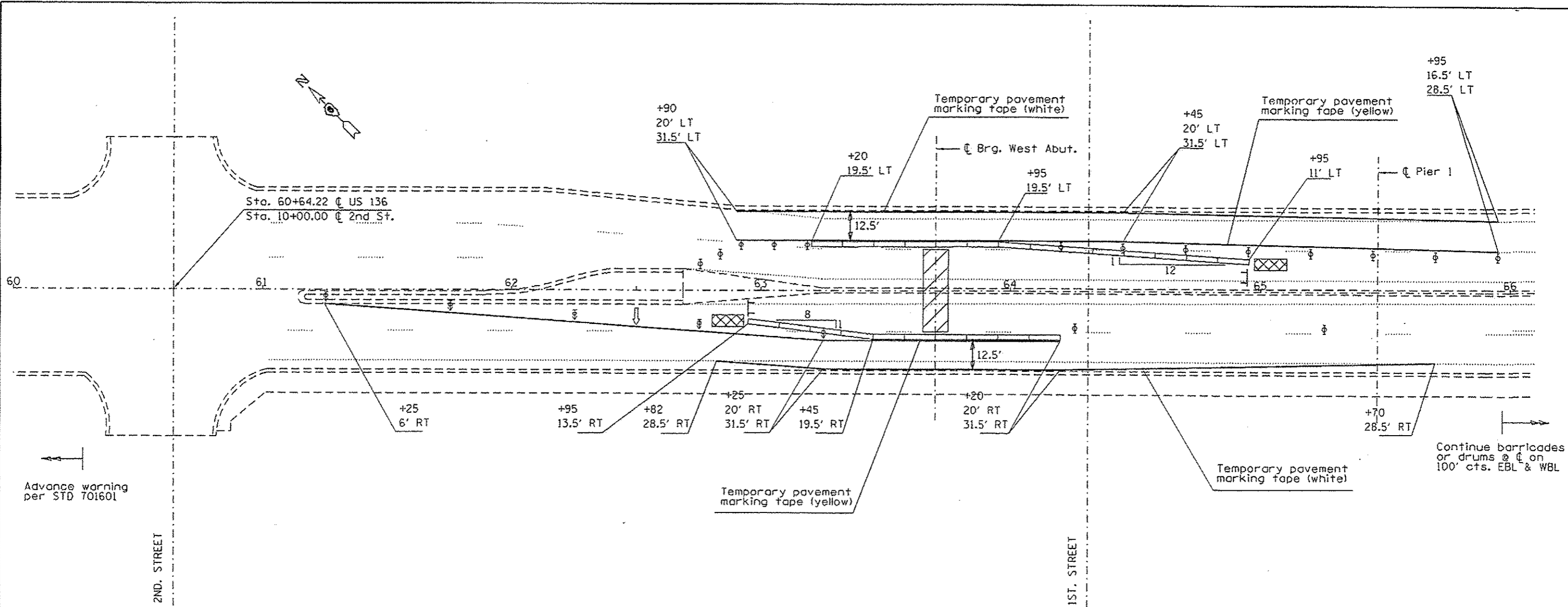
- 000001-06
- 701101-04
- 701106-02
- 701421-07
- 701423-08
- 701601-09
- 701901-04
- 704001-07

GENERAL NOTES:

PROTECTIVE SHIELD SHALL BE PLACED UNDER THE WEST ABUTMENT REMOVAL AREA AT THE DIRECTION OF THE ENGINEER.

<p><b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS DISTRICT 6</b></p>	
<p>EXAMINED <u>March 13<sup>th</sup> 20 15</u></p> <p><i>[Signature]</i> ENGINEER OF OPERATIONS</p>	
<p>EXAMINED <u>March 12 20 15</u></p> <p><i>[Signature]</i> ENGINEER OF PROJECT IMPLEMENTATION</p>	
<p>EXAMINED <u>March 16 20 15</u></p> <p><i>[Signature]</i> ENGINEER OF PROGRAM DEVELOPMENT</p>	

CODE NO.	ITEM	UNIT	TOTAL QUANTITY	CONSTR. CODE
				100% STATE ROADWAY 0014 S.N. 034-0062
50102400	CONCRETE REMOVAL	CU YD	6.1	6.1
50157300	PROTECTIVE SHIELD	SO YD	30	30
50300255	CONCRETE SUPERSTRUCTURE	CU YD	6.2	6.2
50300300	PROTECTIVE COAT	SO YD	29.5	29.5
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	660	660
50800515	BAR SPLICERS	EACH	16	16
52000110	PERFORMED JOINT STRIP SEAL	FOOT	140	140
<del>67100100</del>	MOBILIZATION	L SUM	1	1
67000400	ENGINEER'S FIELD OFFICE, TYPE A	CAL MO	6	6
70100310	TRAFFIC CONTROL AND PROTECTION, STANDARD 701421	L SUM	1	1
70100325	TRAFFIC CONTROL AND PROTECTION, STANDARD 701423	EACH	2	2
70106800	CHANGEABLE MESSAGE SIGN	CAL MO	8	8
70107006	PAVEMENT MARKING BLACKOUT TAPE, 6"	FOOT	2920	2920
70301000	WORK ZONE PAVEMENT MARKING REMOVAL	SQ FT	4200	4200
70400100	TEMPORARY CONCRETE BARRIER	FOOT	800	800
70400200	RELOCATE TEMPORARY CONCRETE BARRIER	FOOT	800	800
70600240	IMPACT ATTENUATORS, TEMPORARY (NON-REDIRECTIVE), TEST LEVEL 2	EACH	4	4
70600340	IMPACT ATTENUATORS, RELOCATE (NON-REDIRECTIVE), TEST LEVEL 2	EACH	4	4
X7200201	WIDTH RESTRICTION SIGNING	L SUM	1	1
Z0016200	DECK SLAB REPAIR (PARTIAL)	SO YD	2.7	2.7
20				



Advance warning per STD 701601

Continue barricades or drums @ 100' cts. EBL & WBL

2ND STREET

1ST STREET

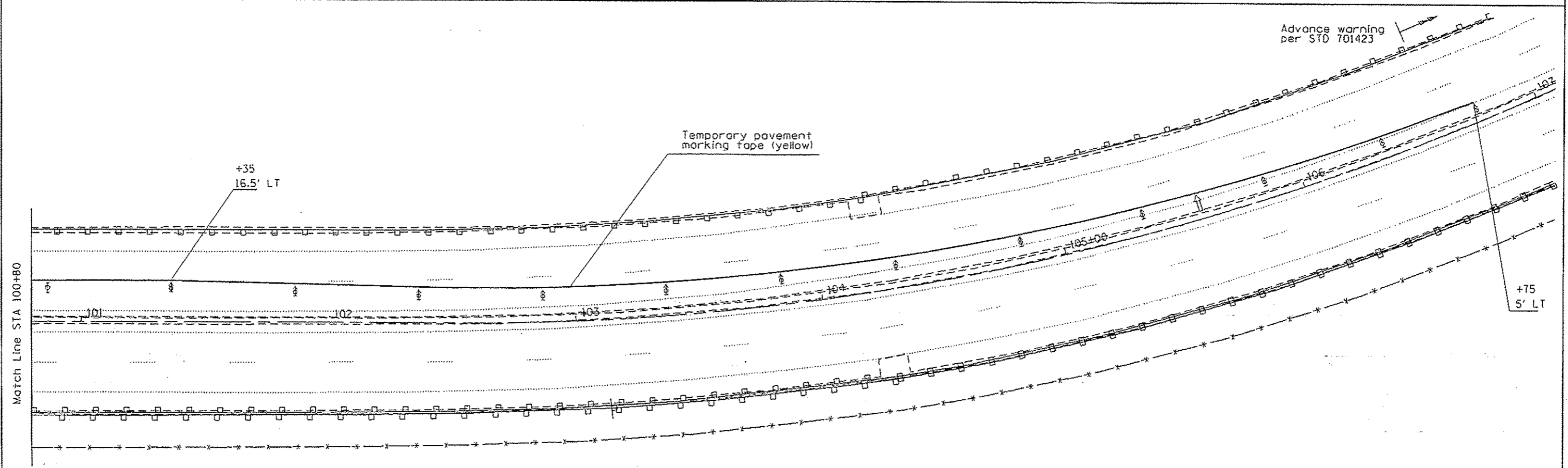
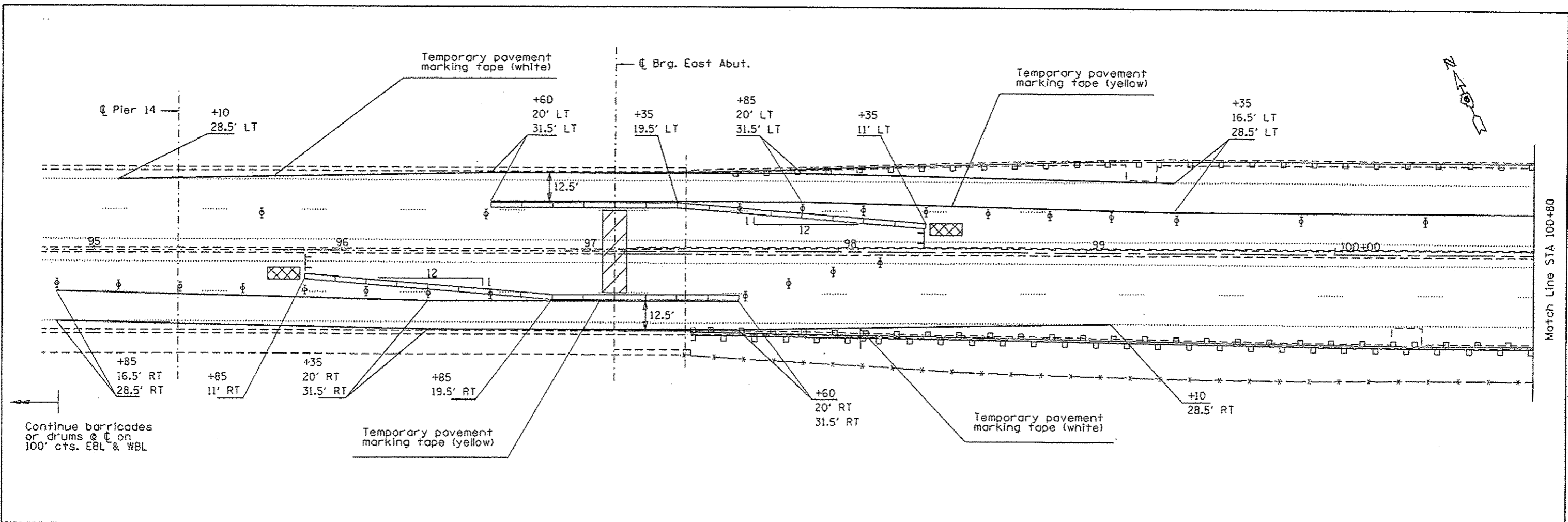
**SYMBOLS**

- Arrow board
- Work area
- Direction indicator barricade with steady burn monodirectional light
- Type II barricade, drum, or vertical barricade with steady burn monodirectional light
- Temporary concrete barrier
- Impact attenuator
- Type III barricade with two steady burn monodirectional lights

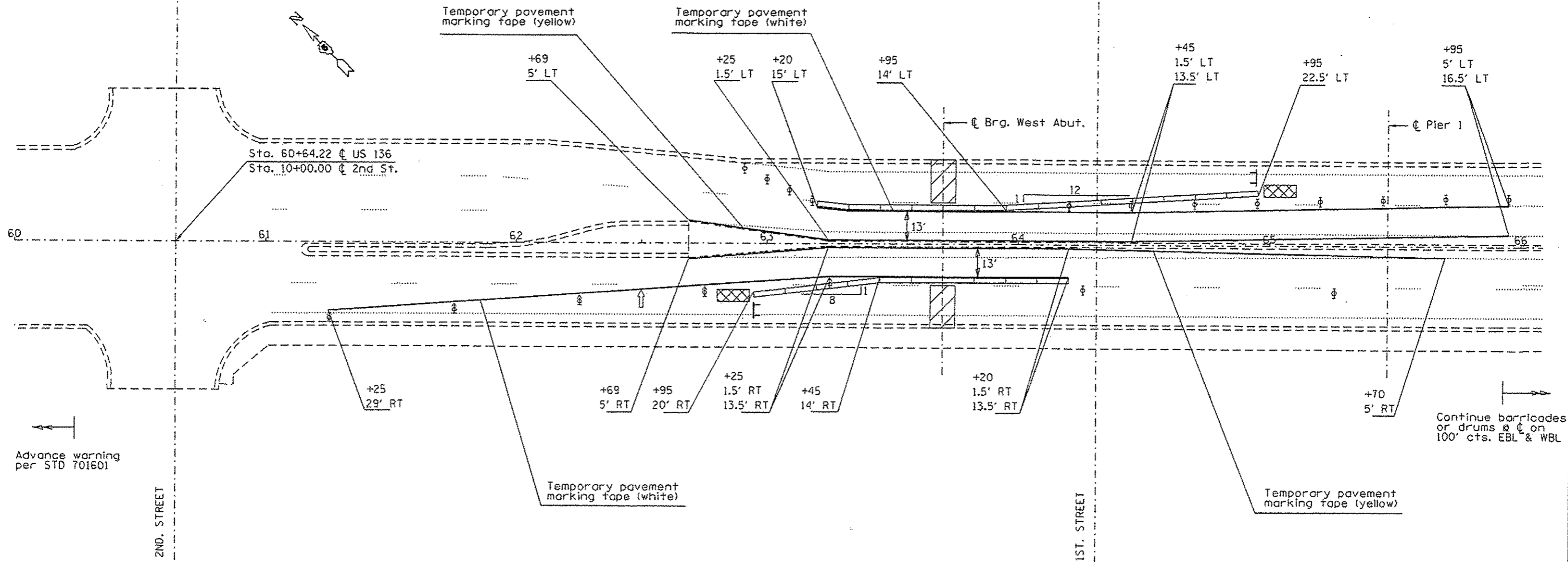
PAVEMENT MARKING BLACKOUT TAPE, 6" (PAID SEPARATELY)			
LOCATION	STA	TO STA	LENGTH
WBL OUTSIDE EDGE	62+90	65+95	305'
WBL OUTSIDE EDGE	95+10	99+35	425'
WBL INSIDE EDGE	62+69	65+95	326'
WBL INSIDE EDGE	95+10	99+35	425'
EBL INSIDE EDGE	62+69	65+70	301'
EBL INSIDE EDGE	94+85	99+10	425'
EBL OUTSIDE EDGE	62+82	65+70	288'
EBL OUTSIDE EDGE	94+85	99+10	425'
TOTAL:			2920'

**NOTES:**








1. Traffic control shall be per standard 701423 and as modified in this detail.
2. All advanced warning signage shall conform to the standards specified in this detail and the cost shall be included in the bid price for TRAFFIC CONTROL AND PROTECTION, STANDARD 701423.
3. Temporary pavement markings shown, excluding blackout tape, shall be considered incidental to TRAFFIC CONTROL AND PROTECTION, STANDARD 701423 and shall not be measured for payment.



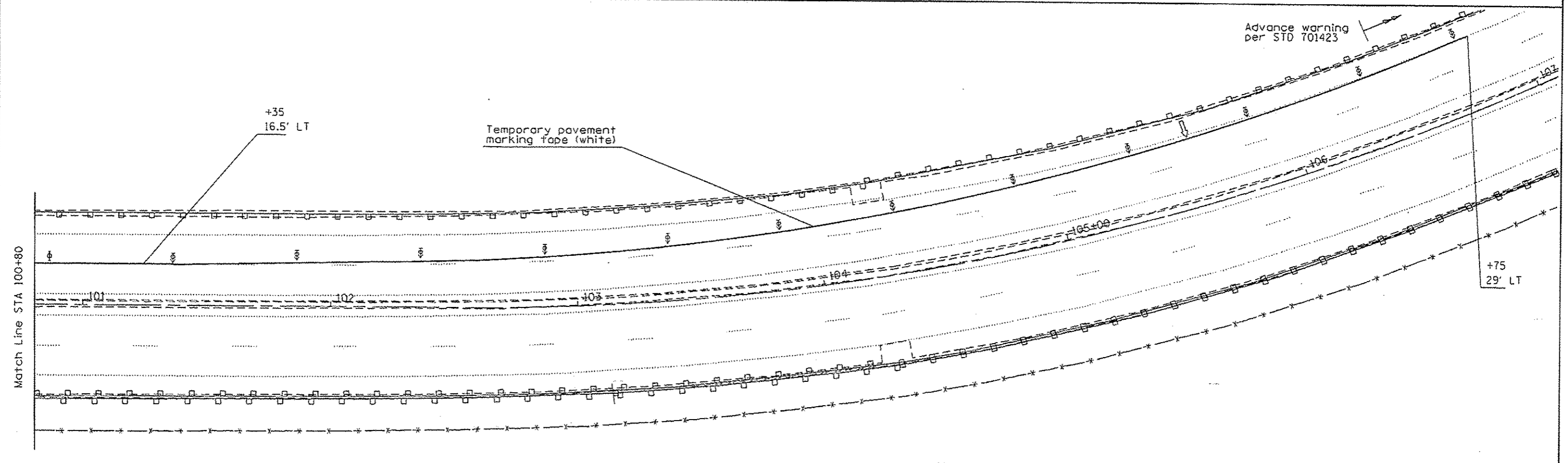
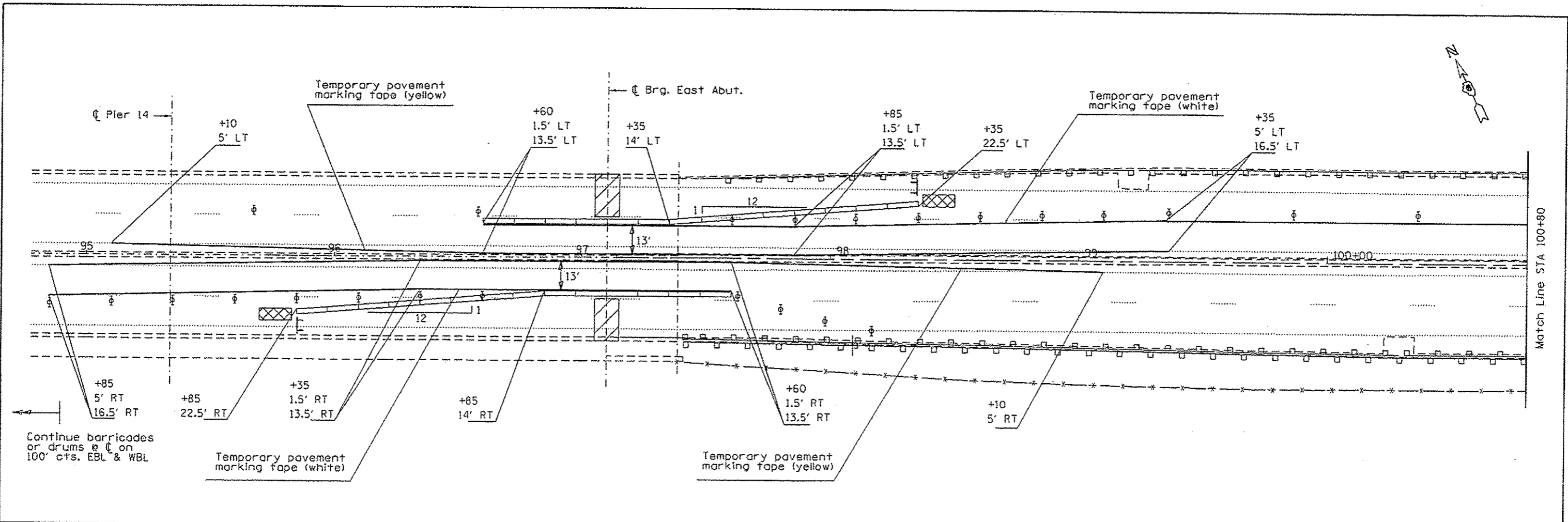
FILE NAME *	USER NAME * dudleybn	DESIGNED -	REVISED -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>TRAFFIC CONTROL DETAIL (STAGE 1 - EAST ABUTMENT JOINT)</b>		F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
OPERATION\Bridges\Bridgplans\CA0572455 - Keokuk joint replacement 2015\plansh	DRAWN -	CHECKED -	REVISED -		315	(30) BJR	HANCOCK	11	4		
Default	PLOT SCALE * 100.0000' / in.	DATE -	REVISED -		SCALE: _____ SHEET _____ OF _____ SHEETS STA. _____ TO STA. _____		CONTRACT NO. 72H56		ILLINOIS FED. AID PROJECT		
	PLOT DATE * Mon 10-2013 02:37:18PM										



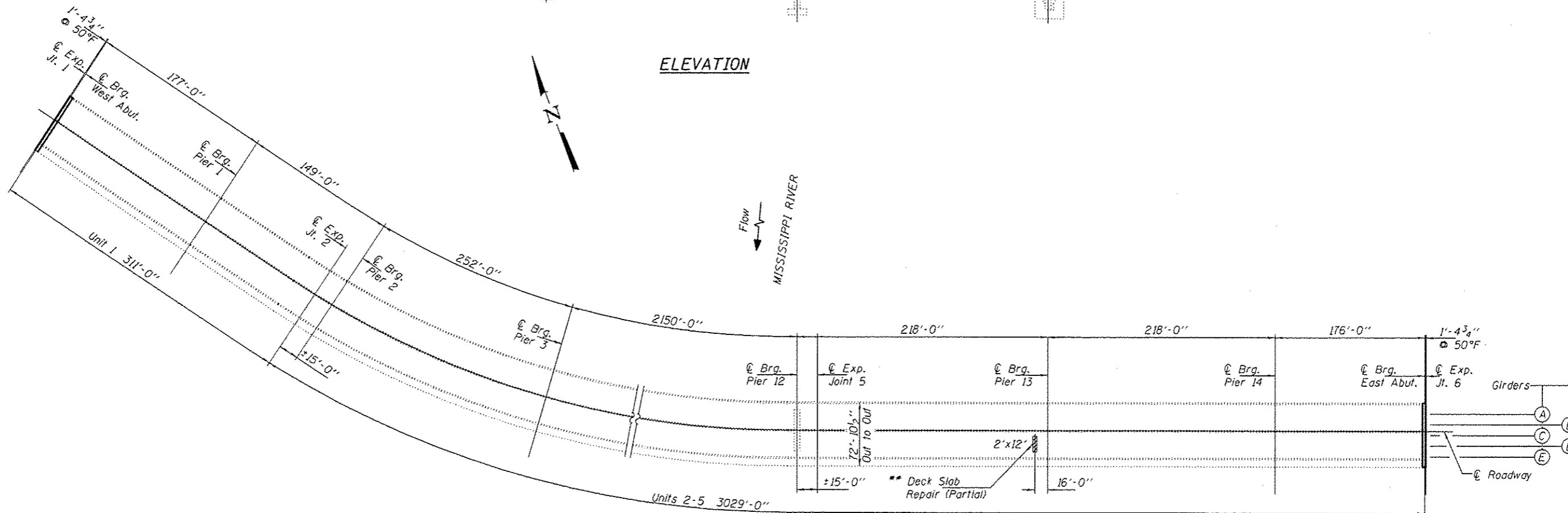
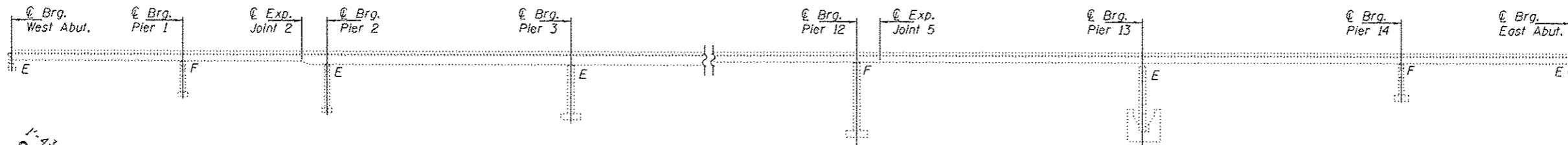
**SYMBOLS**

-  Arrow board
-  Work area
-  Direction indicator barricade with steady burn monodirectional light
-  Type II barricade, drum, or vertical barricade with steady burn monodirectional light
-  Temporary concrete barrier
-  Impact attenuator
-  Type III barricade with two steady burn monodirectional lights

FILE NAME D:\OPERATIONS\Bridges\Bridgesplans\CAD\7	USER NAME dudlayn	DESIGNED -	REVISED -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>TRAFFIC CONTROL DETAIL (STAGE 2 - WEST ABUTMENT JOINT)</b>		F.A.P. RTE. 315	SECTION (30) BJR	COUNTY HANCOCK	TOTAL SHEETS 11	SHEET NO. 5
	PLOT SCALE 100,0000' / in.	CHECKED -	REVISED -				SCALE: _____	SHEET _____	OF _____	SHEETS	STA. _____
Default	PLOT DATE 10-19-2015 02:37:28PM	DATE -	REVISED -								



FILE NAME : D:\OPERATIONS\Bridges\BridgesPlans\CAD\7	USER NAME : dudleybn	DESIGNED -	REVISED -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>TRAFFIC CONTROL DETAIL (STAGE 2 - EAST ABUTMENT JOINT)</b>		F.A.P. RTE. 315	SECTION 1301 BJR	COUNTY HANCOCK	TOTAL SHEETS 11	SHEET NO. 6
Default	HSS - Keokuk joint replacement 2015\planshe	DRAWN -	REVISED -		SCALE: _____	SHEET _____ OF _____ SHEETS	STA. _____ TO STA. _____	CONTRACT NO. 72H56		ILLINOIS REG. 410 PROJECT	
	PLOT SCALE = 100.0000' / in.	CHECKED -	REVISED -								
	PLOT DATE = Mar-18-2015 02:37:41PM	DATE -	REVISED -								



ELEVATION

PLAN

\*\* Existing weather monitors in the deck to be removed with partial depth patching.

**GENERAL NOTES**

All structural steel shall conform to AASHTO Classification M-270 Gr. 36, unless otherwise noted.  
 Plan dimensions and details relative to existing plans are subject to nominal construction variations. The Contractor shall field verify existing dimensions and details affecting new construction and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.  
 The deck surface shall have its final finish tined according to Article 420.09(e)(1) of the Standard Specifications. Cost included with Concrete Superstructure.  
 Joint openings shall be adjusted according to Article 520.04 of the Std. Specs. when the deck is poured at an ambient temperature other than 50° F.  
 Reinforcement bars designated (E) shall be epoxy coated.

**TOTAL BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
Concrete Removal	Cu. Yd.	6.1
Concrete Superstructure	Cu. Yd.	6.2
Preformed Joint Strip Seal	Foot	140
Reinforcement Bars, Epoxy Coated	Pound	660
Bar Splicers	Each	16
Deck Slab Repair (Partial)	Sq. Yd.	2.7
Protective Coat	Sq. Yd.	29.5

\* New concrete only



Expires: November 30, 2016

DESIGNED - *[Signature]*  
 CHECKED - *[Signature]*  
 DRAWN - Kyle M. Stoffan  
 CHECKED - CCC

PASSED *[Signature]*  
 ACTING ENGINEER OF BRIDGES AND STRUCTURES

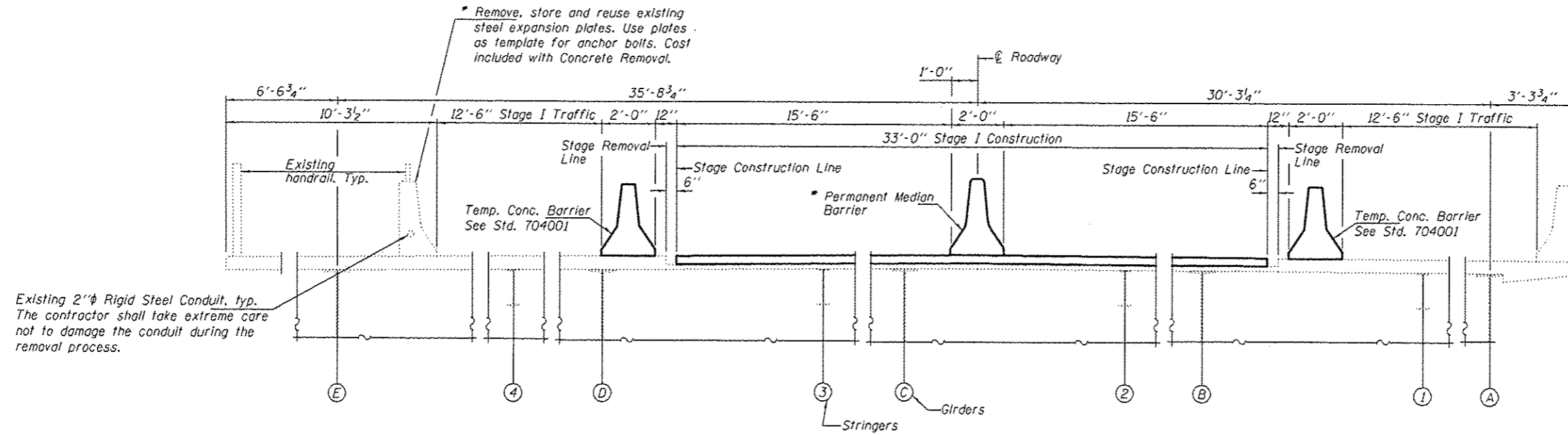
DATE - MAY 5, 2015

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

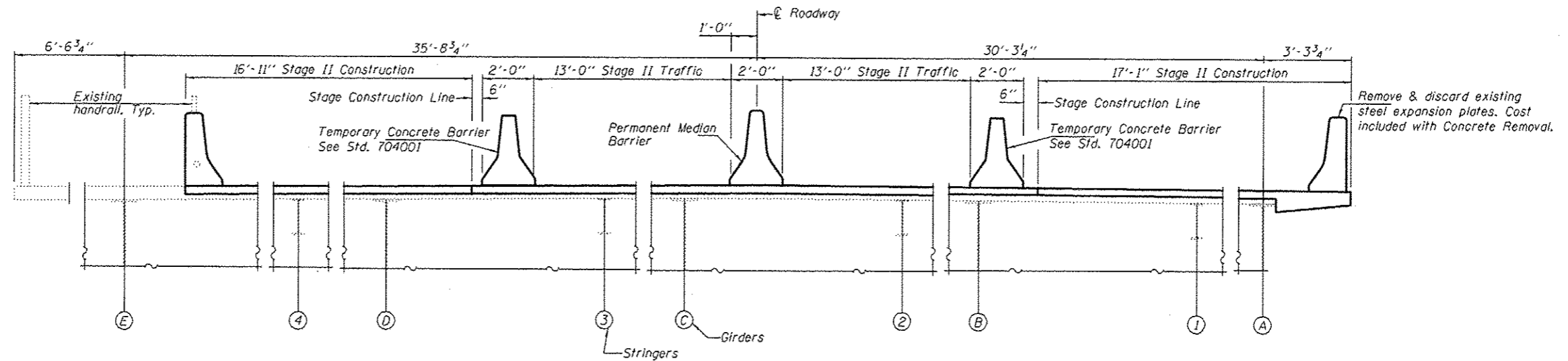
GENERAL PLAN & ELEVATION  
 U.S. ROUTE 136 OVER THE MISSISSIPPI RIVER  
 SN 034-0062

SHEET NO. 1 OF 5 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
315	(30)B,R	HANCOCK	11	7
CONTRACT NO. 72H56				
ILLINOIS FED. AID PROJECT				



**STAGE I CONSTRUCTION DETAILS**  
(Looking West)



**STAGE II CONSTRUCTION DETAILS**  
(Looking West)

DESIGNED - CCC  
CHECKED - SMR  
DRAWN - Kyle M. Steffen  
CHECKED - CCC SMR

DATE - MAY 5, 2015  
PASSED  
*Carl Perry*  
ACTING ENGINEER OF BRIDGES AND STRUCTURES

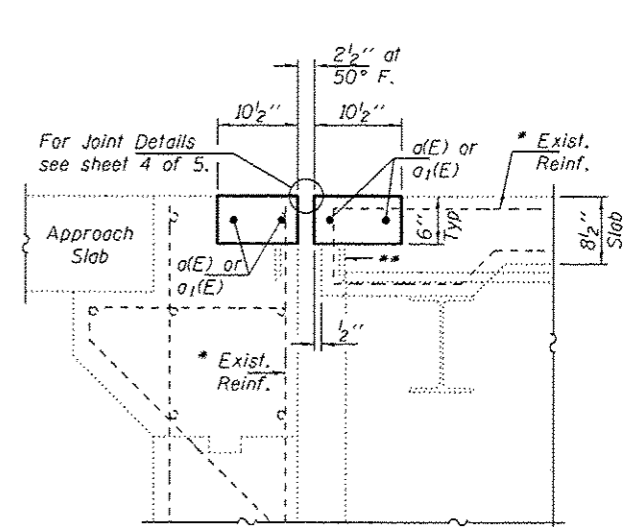
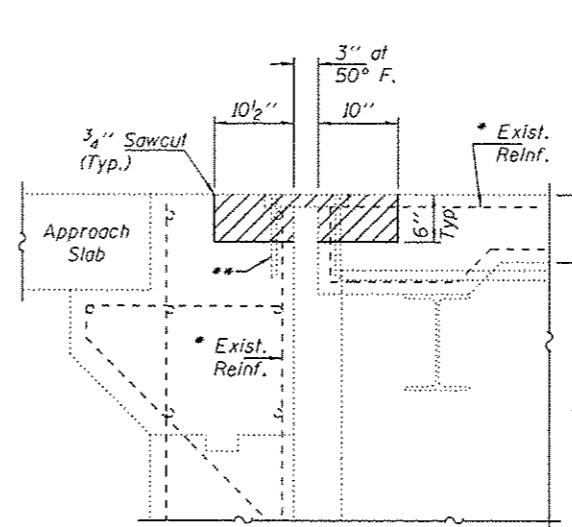
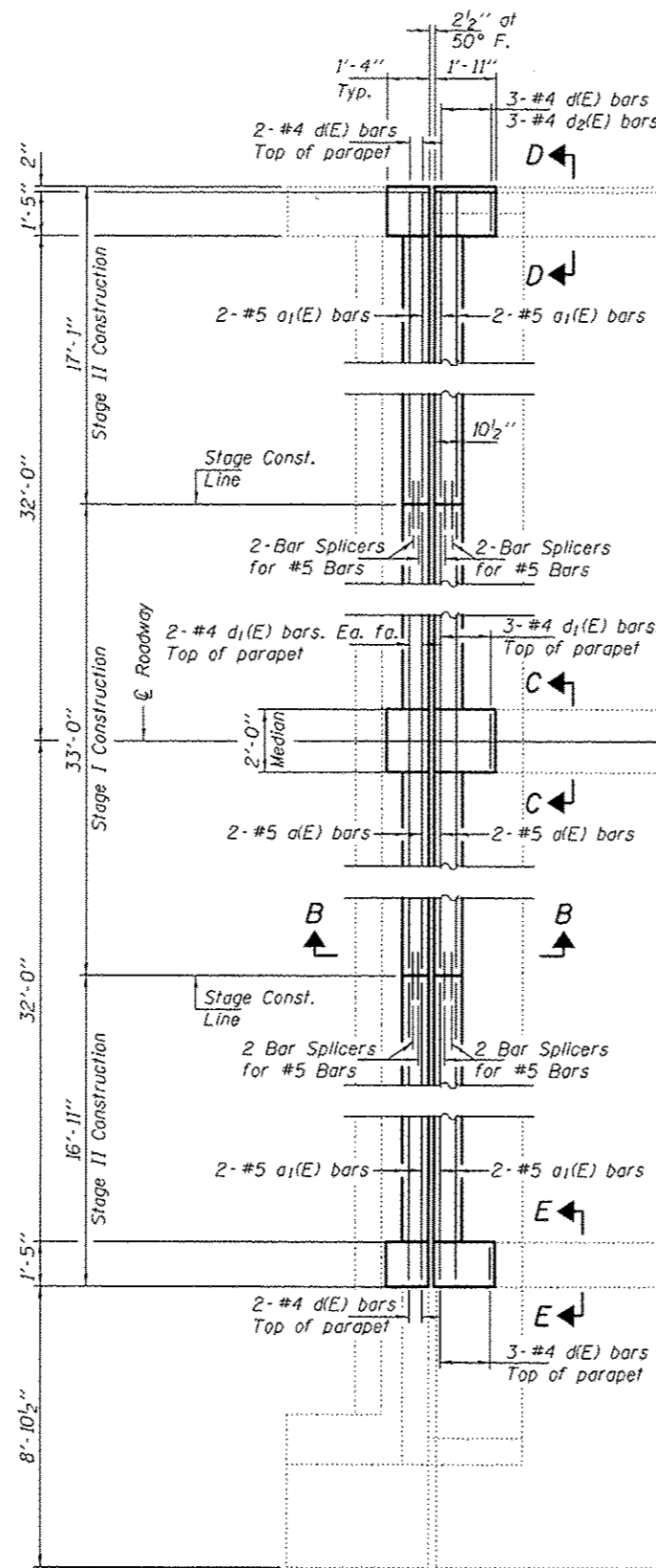
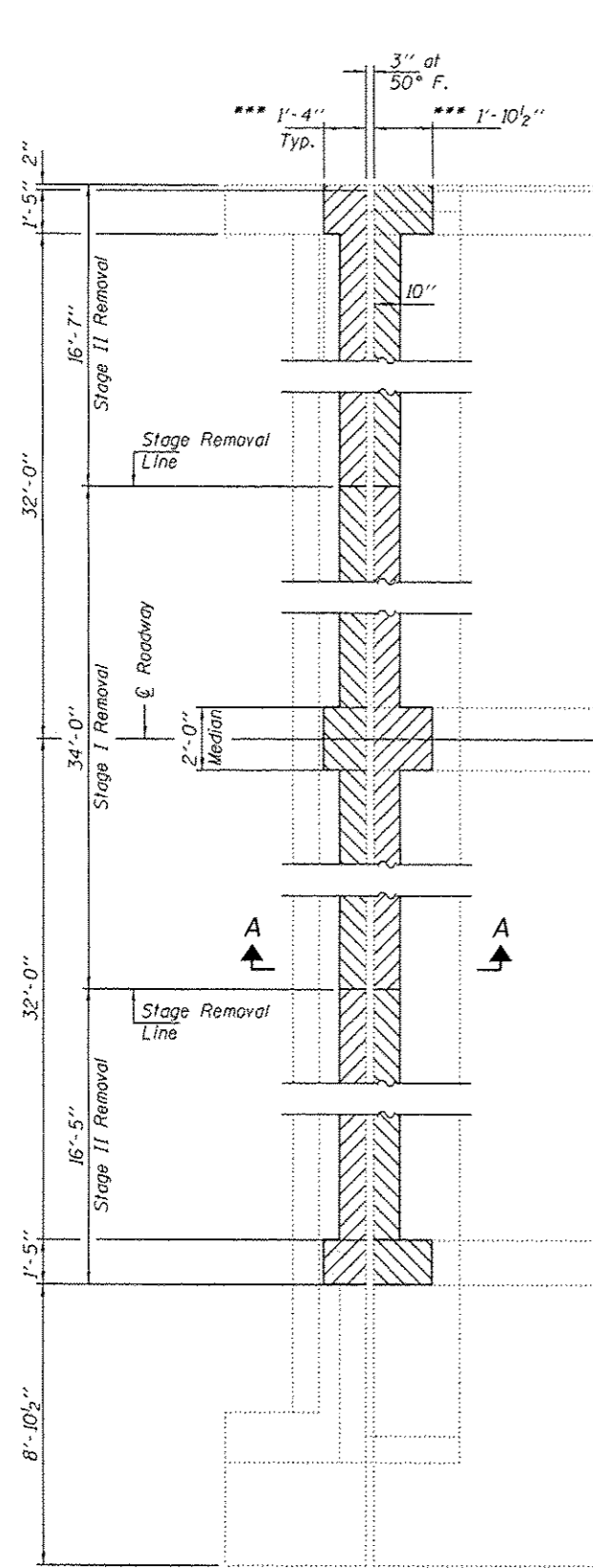
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

STAGING DETAILS  
SN 034-0062

SHEET NO. 2 OF 5 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
315	1301B, JR	HANCOCK	11	8
CONTRACT NO. 72H56			ILLINOIS FED. AID PROJECT	



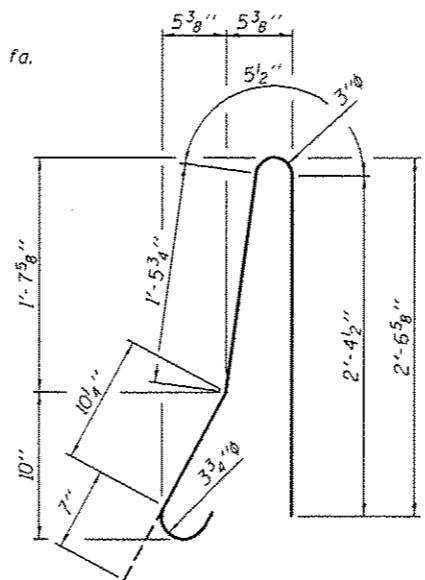


SECTION A-A

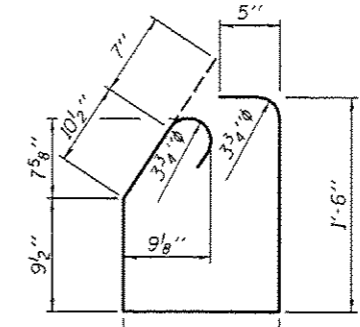
SECTION B-B

\* Existing reinforcement bars extending into the removal area shall be cleaned, straightened and incorporated into the new construction. Any reinforcement bars that are damaged during concrete removal shall be replaced with an approved bar splicer or anchorage system. Cost included with Concrete Removal.

\*\* Existing Studs to be cut flush with concrete. (Typ.)

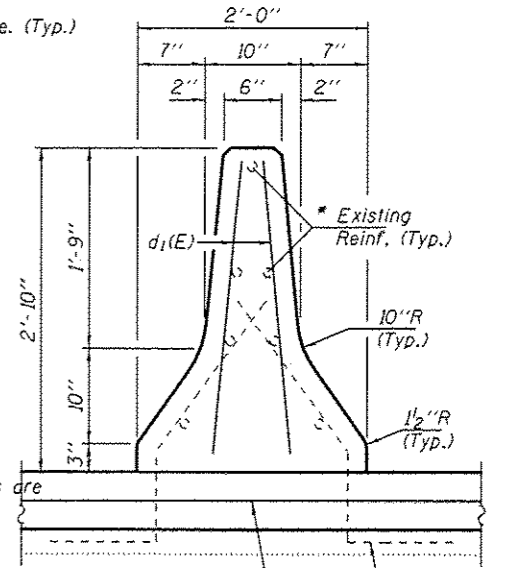


BAR d1(E)

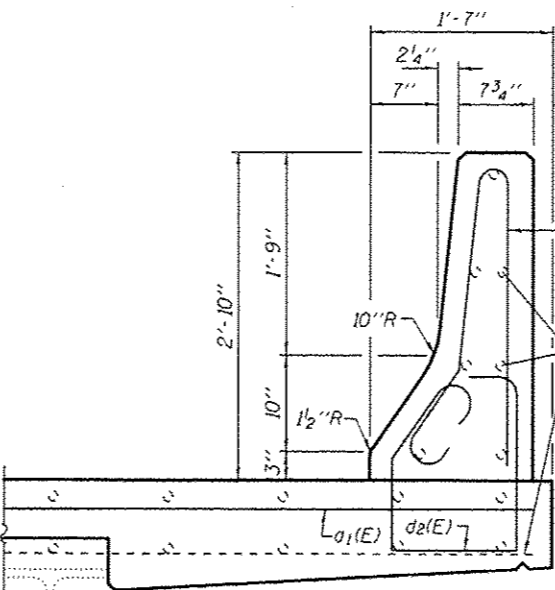


BAR d2(E)

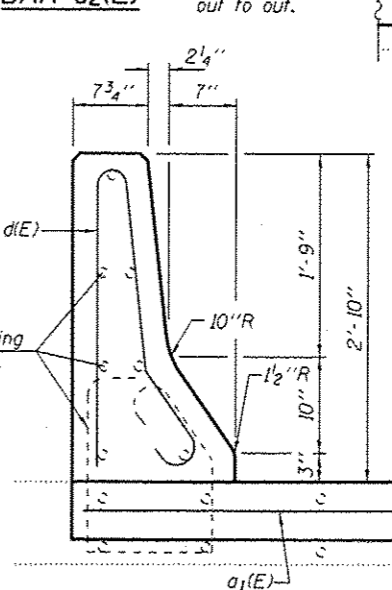
Note: Rebar dimensions are out to out.



VIEW C-C



VIEW D-D



VIEW E-E

**BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
d1(E)	8	#5	32'-8"	—
a1(E)	16	#5	16'-7"	—
d(E)	20	#4	5'-9"	U
d1(E)	10	#4	2'-7"	—
d2(E)	6	#4	5'-3"	LS
Concrete Removal		Cu. Yd.	6.1	
Concrete Superstructure		Cu. Yd.	6.2	
Bar Splicers		Each	16	
Reinforcement Bars, Epoxy Coated		Pound	660	

**CONCRETE REMOVAL AT ABUTMENT**  
(West Abutment shown, East Abutment similar by 180° rotation)

**CONCRETE REPLACEMENT AT ABUTMENT**  
(West Abutment shown, East Abutment similar by 180° rotation)

\*\*\* Limits of parapet removal may be varied in the field by the Engineer to match the locations of existing construction and open joints or to miss existing name plates. Any fall post anchorage within the removal area at the south parapet shall be cleaned and incorporated in the new construction. Cost included with concrete removal.

DESIGNED - CCC  
CHECKED - SMR  
DRAWN - Kyle M. Staffan  
CHECKED - CCC SMR

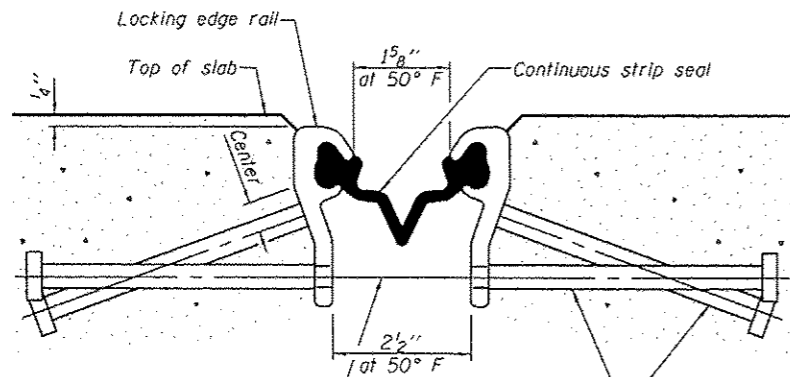
PASSED  
DATE - MAY 5, 2015  
ACTING ENGINEER OF BRIDGES AND STRUCTURES

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

JOINT REMOVAL & REPLACEMENT DETAILS  
SN 034-0062

SHEET NO. 3 OF 5 SHEETS

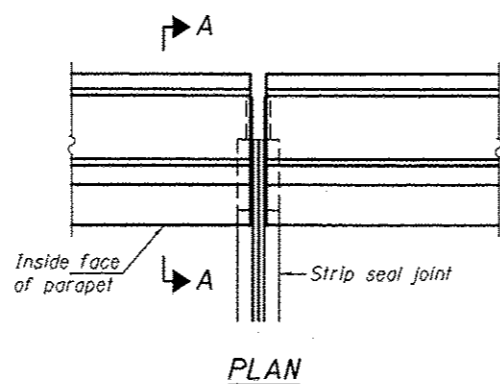
F.A.P. SECTION COUNTY TOTAL SHEETS SHEET NO.  
R.T.E. 315 (30)B,R HANCOCK 11 9  
CONTRACT NO. 72H56  
ILLINOIS FED. AID PROJECT



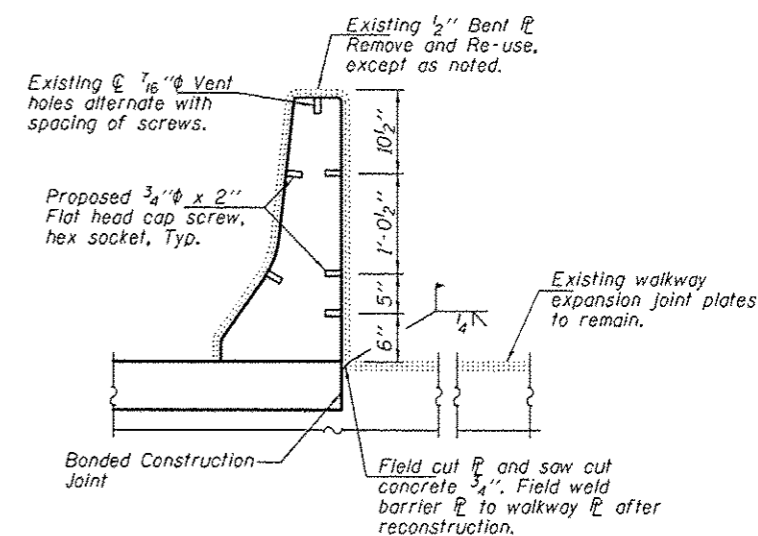
7/16"  $\phi$  holes at 4'-0" cts. for 3/8"  $\phi$  bolts. All bolts shall be burned, sawed, or chipped off flush with the plates after forms are removed, typ.

Place 1/2"  $\phi$  x 6" granular or solid flux filled headed studs conforming to Article 1006.32 of the Std. Specs., automatically end welded at 1'-0" alt. cts.

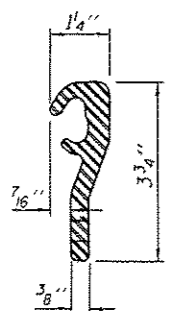
**SECTION THRU SHALLOW STRIP SEAL JOINT**



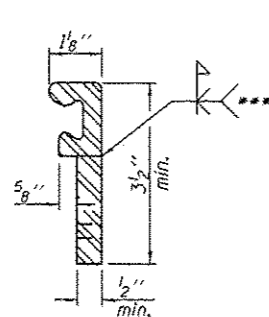
**PLAN**



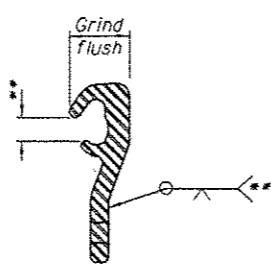
**SOUTH BARRIER**



**ROLLED (EXTRUDED) RAIL**

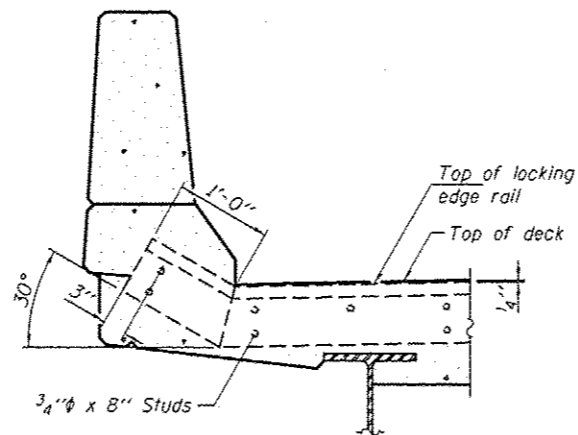


**WELDED RAIL**

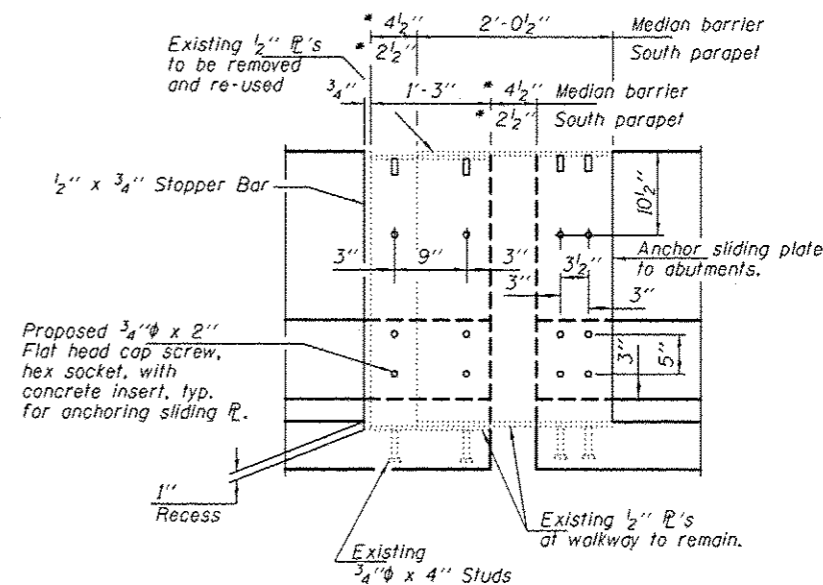


**LOCKING EDGE RAIL SPLICE**

Rolled rail shown, welded rail similar.



**SECTION A-A**



**ELEVATION OF SOUTH BARRIER AT EXPANSION JOINT**  
(Median Barrier Similar)

\* at 50°F

**LOCKING EDGE RAIL**

\*\* Omit weld at seal opening.

\*\*\* Back gouge not required if complete joint penetration is verified by mock-up.

**Notes:**

The strip seal shall be made continuous and shall have a minimum thickness of 1/4". The configuration of the strip seal shall match the configuration of the Locking Edge Rails.

The height and thickness of the Locking Edge Rails shown are minimum dimensions. The actual configuration of the Locking Edge Rails and matching strip seal may vary from manufacturer to manufacturer. Flanged edge rails will not be allowed.

The inside of the Locking Edge Rail groove shall be free of weld residue. Locking Edge Rails may be spliced at slope discontinuities and stage construction joints.

The manufacturer's recommended installation methods shall be followed. All steel components shall be galvanized after fabrication according to Article 520.03 of the Standard Specifications.

Maximum space between rail segments at stage lines shall be 3/16", sealed with a suitable sealant

**BILL OF MATERIAL**

Item	Unit	Total
Prefomed Joint Strip Seal	Foat	140

DESIGNED - CCC
CHECKED - SMR
DRAWN - Kyle M. Steffon
CHECKED - CCC SMR

PASSED

*Carl Papp*  
ACTING ENGINEER OF BRIDGES AND STRUCTURES

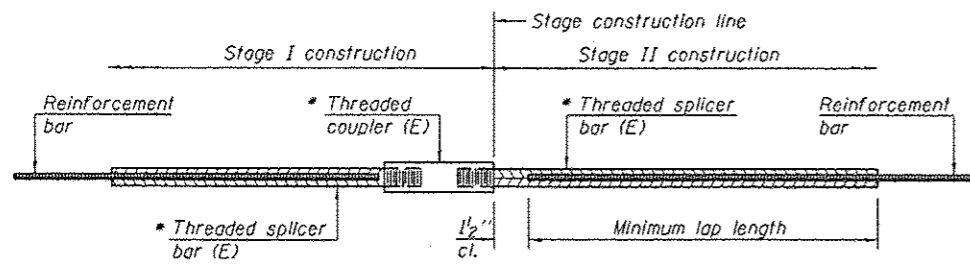
DATE - MAY 5, 2015

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

PREFORMED JOINT STRIP SEAL DETAILS  
SN 034-0062

SHEET NO. 4 OF 5 SHEETS

F.A.P. R.T.E. 315	SECTION 130B-R	COUNTY HANCOCK	TOTAL SHEETS 11	SHEET NO. 10
ILLINOIS FED. AID PROJECT			CONTRACT NO. 72H56	



**STANDARD BAR SPLICER ASSEMBLY**

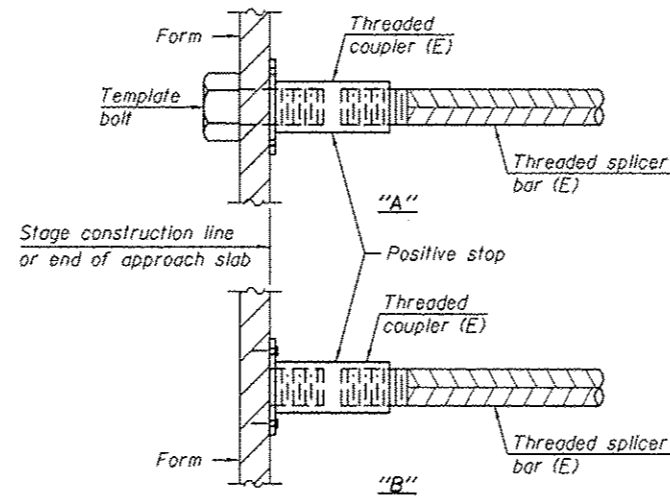
Bar size to be spliced	Minimum Lap Lengths					
	Table 1	Table 2	Table 3	Table 4	Table 5	Table 6
3, 4	1'-5"	1'-11"	2'-1"	2'-4"	2'-7"	2'-11"
5	1'-9"	2'-5"	2'-7"	2'-11"	3'-3"	3'-8"
6	2'-1"	2'-11"	3'-1"	3'-6"	3'-10"	4'-5"
7	2'-9"	3'-10"	4'-2"	4'-8"	5'-2"	5'-10"
8	3'-8"	5'-1"	5'-5"	6'-2"	6'-9"	7'-8"
9	4'-7"	6'-5"	6'-10"	7'-9"	8'-7"	9'-8"

- Table 1: Black bar, O.B Class C
- Table 2: Black bar, Top bar lap, O.B Class C
- Table 3: Epoxy bar, O.B Class C
- Table 4: Epoxy bar, Top bar lap, O.B Class C
- Table 5: Epoxy bar, Class C
- Table 6: Epoxy bar, Top bar top, Class C

Threaded splicer bar length = min. lap length + 1/2" + thread length

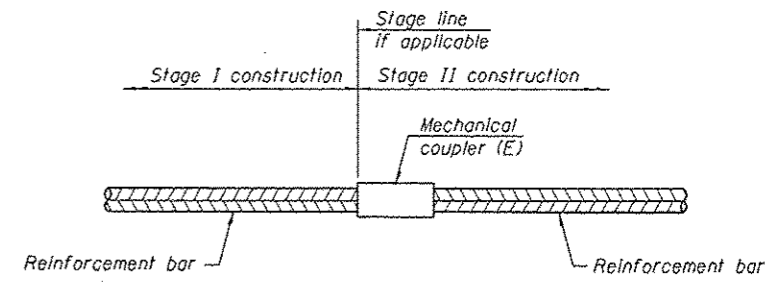
\* Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.

Location	Bar size	No. assemblies required	Table for minimum lap length
W. Abut.	5	8	3
E. Abut.	5	8	3



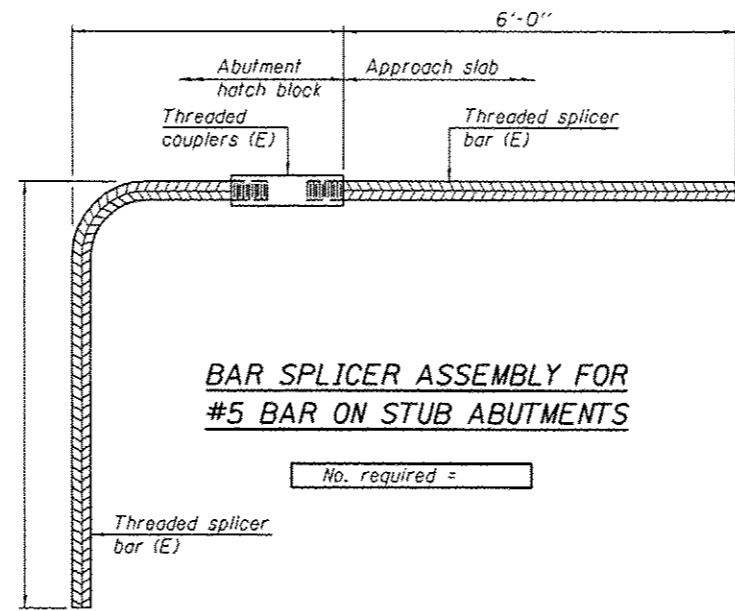
**INSTALLATION AND SETTING METHODS**

"A" : Set bar splicer assembly by means of a template bolt.  
 "B" : Set bar splicer assembly by nailing to wood forms or cementing to steel forms.  
 (E) : Indicates epoxy coating.



**STANDARD MECHANICAL SPLICER**

Location	Bar size	No. assemblies required



**BAR SPLICER ASSEMBLY FOR #5 BAR ON STUB ABUTMENTS**

No. required =

**NOTES**

Splicer bars shall be deformed with threaded ends and have a minimum 60 ksi yield strength.  
 All reinforcement shall be lapped and tied to the splicer bars.  
 Bar splicer assemblies shall be epoxy coated according to the requirements for reinforcement bars. See Section 508 of the Standard Specifications.  
 See approved list of bar splicer assemblies and mechanical splicers for alternatives.

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